

## Description

Distribution device for optimized distribution of short messages to an IP-compatible terminal

### Presentation of the inventive problem

5 Reliable and also cost-optimized and time-optimized sending of short messages (SMS) or multimedia messages with images (MMS) to an IP-compatible terminal, e.g. a Set Top Box (STB) or Personal Computer (PC), which is connected via a high-bit-rate line (e.g. DSL or cable) to the telecommunication network. The  
10 method better exploits the existing technical options of the transport networks than today's existing solutions.

### Possible solutions to the problem presented

- The distribution center (SMS/MMS Service Center) sends the short message over the packet switched IP network  
15 through to the subscriber, but the message is discarded if the subscriber is not online. The distribution center has no opportunity to check whether the message has actually arrived. This is generally not an acceptable solution, especially not for operators who impose high  
20 demands on the reliability of their service, e.g. fixed network operators.
- The distribution center always sends the short message over the circuit switched network. This guarantees that the subscriber also actually gets the message. However  
25 this is only possible if the subscriber has subscribed to a PSTN service (i.e. has a splitter at home and possesses a PSTN subscription with a PSTN telephone number). In addition this is generally a very expensive route which requires additional functions in the distribution center.  
30 Previously it has not been known how and SMS or MMS can

be sent reliably over the most suitable route to an individual Set Top Box.

Inventive solution to the problem presented

A new communication is introduced into the network between the SMS/MMS distribution center (distribution device) and a registration entity. To do this it is necessary to introduce new functions in both components.

With the aid of this communication relationship the distribution center can ask the registration entity whether the subscriber has currently activated their broadband connection (i.e. is online and has a valid IP address) The distribution center also contains a new coordination function which evaluates the results of the inquiry to the registration entity and sends the short messages in accordance with the available routes to IP-compatible terminal of the subscriber, e.g. an STB.

An exemplary embodiment of the invention is explained in greater detail below with reference to the drawing which comprises one figure.

A subscriber possesses an STB, which for example supports the services video on demand, video telephony and also sending and receiving of short messages. An SMS/MMS client is required in the STB for the latter service. The STB is connected via a DSL line to a DSLAM or optionally also via a splitter to the local office. An SMS/MMS Service Center (distribution device) is located in the network, in which the short messages of different subscriber types (e.g. video network subscribers, mobile radio subscribers) are received and forwarded to the addressees. In addition there is a registration entity present in the DSL-based network (e.g. a broadband access router, a radius server or also an SIP Registrar/Server), with which the

subscriber can register (see (1) in the Figure), so that the current status of his network access, e.g. of his IP broadband access is recorded there. The status is either "online" i.e. that the subscriber has been assigned an IP address and the  
5 PPPoE session is active or the status is "inactive", i.e. the subscriber has no IP-based connection.

A given subscriber now sends, e.g. sends an MMS from a mobile network to another subscriber which is to be submitted to their STB. The MMS reaches the distribution center. This center now  
10 asks the registration entity whether the subscriber is registered, i.e. is "online" (2). If they are the distribution center receives the current IP address of the STB and sends the MMS via the packet switched IP network to the STB (3). To this end the distribution center must pack the MMS into IP packets  
15 with the IP address just received.

If the subscriber is not active, the distribution center can buffer the MMS and ask the registration entity at regular intervals whether the status has changed or if possible send the MMS via the circuit-switched network (PSTN) to the STB.(4).  
20 To this end it establishes a speech channel to the subscriber for example and sends the MMS in this via a modem connection. This is in general the more expensive variant, which also requires additional functions in the distribution center (e.g. a modem) and is also time-consuming. The aim should be only to  
25 use this route if the more favorable DSL route is not available.

The advantages of the invention are as follows. Short messages can be sent reliably to an STB, whereby the possible routes are checked for availability and the short messages are sent over  
30 the most suitable route. The selection of the route can take account of costs for transporting the data, data rate and further aspects In particular a check can be made for the more

cost-effective transport routes (e.g. via ADSL) as to whether the short messages can really be sent to the subscriber and will not be lost on the way there.